

## CASE REPORT

### GINGIVAL DEPIGMENTATION AND PINK AESTHETICS: A CASE REPORT

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#### ABSTRACT

The colour of gingiva has a tremendous impact on the overall aesthetics of an individual. Clinically, gingival melanin hyperpigmentation is presented as 'black gum', which is a common aesthetic problem especially for those who have a gummy smile. It mainly affects the self-esteem, appearance, and confidence of an individual, and it can also have a psychological impact on many patients. Gingival depigmentation can be carried out as part of its treatment using various methods. A case is reported here where scalpel surgery was performed.

#### INTRODUCTION

Gingival tissues form a crucial part of a pleasing smile. The harmony of the smile is determined not only by shape, position and colour of teeth but also by colour and dimensions of the gingiva.<sup>1</sup> The gingiva is the most frequently pigmented intraoral tissues.<sup>2</sup> Melanin, a brown pigment, is the most common cause of endogenous pigmentation of the gingiva. Excessive gingival pigmentation is a major aesthetic concern for many people. This impact is aggravated in patients with "gummy smile" or excessive gingival display while smiling (high smile line).<sup>3</sup>

Gingival depigmentation is a periodontal plastic surgical procedure, wherein the hyperpigmented tissue is eliminated or reduced by various techniques.<sup>4</sup> Several attempts have been made for removal of gingival pigmentation by different techniques like chemical methods using escharotic agents (95% alcohols, 90% phenols, and ascorbic acid), bur abrasion, scraping, and excisional method, electrocautery, cryosurgery, radiosurgery, free gingival graft, sub-epithelial connective tissue graft, acellular dermal matrix autograft, and more lately lasers. Each technique has its own supremacy in efficiency and also drawbacks. Selection of the technique should be based on clinical experience, patients' paying capacity and individual

preference of the clinician.<sup>5</sup> This case report highlights a case of excessive gingival hyperpigmentation treated with gingival depigmentation using the scalpel technique.

#### CASE REPORT

A 31-year-old male patient reported to Department of Periodontology and Oral Implantology, Chitwan Medical College and Teaching Hospital with a chief complain of blackish discoloration of gum in lower front tooth region; which he felt as aesthetically unappealing (Figure 1).



Figure 1: Preoperative clinical photograph

Detailed history revealed that the hyperpigmentation was present since birth indicative of physiological hyperpigmentation. The patient had non-contributory medical, dental, drug and family history. It was his first dental visit. His intraoral examination revealed that he had deeply pigmented gingiva from right second premolar to left second premolar in the lower arch. The patient demanded an aesthetic treatment to make her “black” colored gums look better.

Knowing the concern of the patient, the depigmentation procedure and its various treatment modalities were comprehensively explained to the patient along with their advantages and limitations. Signed written consent was taken after the patient became ready for the treatment to be provided. Phase I therapy was carried out during the initial visit.

Routine investigations were performed prior to the surgery. The results were within limits, with no contraindications for the surgery. Among all the treatment modalities available for treatment of gingival melanin pigmentation, the conventional scalpel method was preferred.

The procedure was scheduled under perfectly aseptic conditions. After an administration of a local anesthetic solution (2% lignocaine (1:80,000 adrenaline), a Bard-Parker handle with a No. 15 blade was used to remove the uppermost pigmented layer of the gingiva. The blade was held parallel to the long axis of teeth with minimal pressure (Figure 2).



**Figure 2: Removal of hyperpigmented layer**

The entire pigmented epithelium along with a thin layer of connective tissue was removed (Figure 3).



**Figure 3: Intra-operative photograph**

The pressure was applied with sterile pieces of gauze to control hemorrhage during the procedure. The exposed surface was irrigated with saline; postoperatively the operated area was covered with a periodontal dressing (light-cured resin “Barricaid”)

as shown in figure 4.



**Figure 4: Application of periodontal dressing on operated site**

Post-operative instructions were given along with antibiotics (Amoxicillin 500 mg, three times daily for 5 days) and anti-inflammatory analgesics (Ibuprofen and Paracetamol three times daily for 3 days). The patient was advised to use 0.2% chlorhexidine gluconate mouth wash 12 hourly for 1 week to aid plaque control. The periodontal dressing was removed on 7th day.

The wound healing was uneventful without any postoperative complications. At the end of 1 month, reepithelialization was completed. Six months postoperative examination revealed well-healed gingiva which can be defined as epithelialized tissue, which was pink in colour and pleasant as depicted in Figure 5. The patient was also fully satisfied with the clinical outcomes.



**Figure 5: Post-operative clinical photograph**

## DISCUSSION

The colour of the healthy gingiva is variable ranging from pale pink to deep bluish-purple and this is determined by several factors namely size and number of blood vessels, epithelial thickness, epithelial keratinization and amount of pigment-containing cells within the gingival epithelium.<sup>2,6</sup> Most of the pigmentation is caused by five primary pigments that are Melanin, Melanoid, Oxy-hemoglobin, Reduced haemoglobin, and Carotene.<sup>7</sup> Gingival hyperpigmentation can also be caused by smoking, trauma, infections, certain precancerous lesions, systemic conditions (Addison disease, Peutz-Jeghers disease, Albright disease) or drugs (tetracycline, colchicines etc).<sup>8</sup>

Gingival depigmentation is a periodontal plastic surgical procedure whereby the gingival hyperpigmentation is removed or reduced by various techniques. Although several techniques are currently in use, the scalpel technique is one of the first and still the most widely employed as it is most economical

compared to other techniques those which require more advanced armamentarium and is therefore highly recommended in consideration of the equipment constraints in developing countries. The procedure essentially involves surgical removal of gingival epithelium along with a layer of the underlying connective tissue and allowing the denuded connective tissue to heal by secondary intention. The new epithelium that forms is devoid of melanin pigmentation.<sup>9</sup>

In this particular case, the scalpel method of depigmentation showed better results from both clinical and patient point of view. The area healed completely in 10 days with normal appearance of the gingiva. However, scalpel surgery causes unpleasant bleeding during and after the operation, and it is necessary to cover the surgical site with periodontal dressing for 7-10 days. Though the initial result of the depigmentation surgery is highly encouraging, repigmentation may be a common problem.

Pigment recurrence has been documented to occur following the surgical procedure, within 24 days to 8-year long period.

Repigmentation refers to the clinical reappearance of melanin pigment following a period of clinical depigmentation. The mechanism suggested for the spontaneous repigmentation is that the melanocytes from the normal skin proliferate and migrate into the depigmented areas.<sup>10</sup> But in this particular case, no signs of repigmentation till date; the patient is under regular supervision to assess the recurrence of melanin pigmentation.

## CONCLUSION

Hyperpigmentation of gingiva is a common aesthetic problem. Various treatment modalities available for gingival depigmentation can be considered a boon for patients having hyperpigmented gingiva which yield better cosmetic results. The depigmentation procedure using a scalpel technique as performed in this case report was successful and the patient was also fully satisfied with the clinical outcomes. Thus, it can be concluded that depigmentation of hyperpigmented gingiva by scalpel surgical technique is simple, easy to perform, cost-effective and above all it causes less discomfort and yield better cosmetic results.

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